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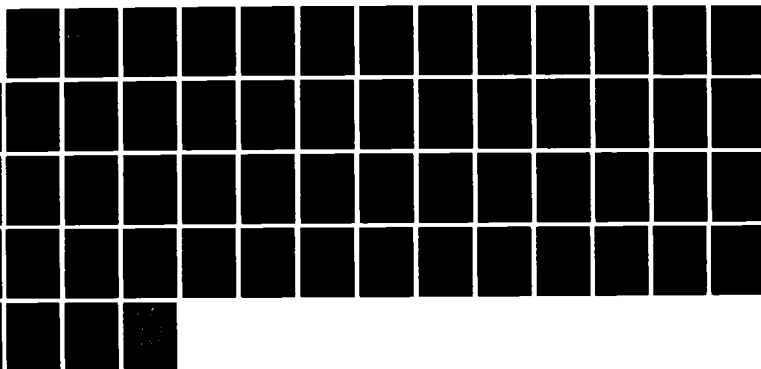
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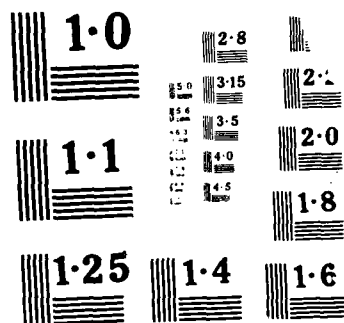
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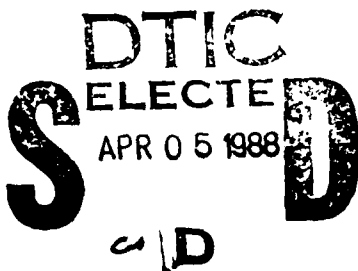


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AirLand Battle and the Division Artillery Counterfire Dilemma

by

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Field Artillery



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Finally, the paper proposes a possible solution to reconciling the dilemma faced by the division artillery commander and his counterfire mission. This proposal will suggest a doctrinal change which once again places the counterfire mission primarily with the corps artillery commander. Along with this doctrinal change will be the formation of counterfire battalions consisting of target acquisitions assets and multiple launched rocket system batteries. These counterfire battalions will be located at corps artillery.

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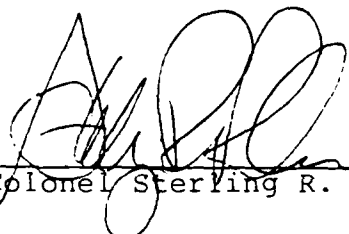
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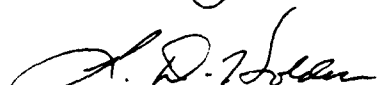
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## ABSTRACT

AIRLAND BATTLE AND THE DIVISION ARTILLERY COUNTERFIRE DILEMMA by  
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This monograph searches for an answer to the question: Does the current division artillery have the capability to perform both its direct support and counterfire missions effectively within the demands of AirLand Battle Doctrine? Historically the counterfire mission was accomplished by corps artillery. However, the increased frontage of a corps on the dispersed battlefield envisioned by the Active Defense Doctrine led to a change in counterfire doctrine. This was appropriate for the Active Defense Doctrine developed in 1973, but this paper will argue that the current AirLand Battle Doctrine imposes different demands. These demands require a new counterfire doctrine for corps and division artillery. This monograph searches for a means to reconcile the demands placed on division artillery by its direct support mission, its counterfire mission, and its limited artillery assets.

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## Table of Contents

1. Introduction.....	1
2. Historical Missions of the Field Artillery.....	4
World War II.....	4
Korean War.....	10
Vietnam War.....	13
Arab-Israeli War of '73.....	16
Summary.....	18
3. AirLand Battle, US Artillery, and the Threat.....	20
AirLand Battle Doctrine and the Principles of Fire Support..	20
Field Artillery Doctrine and Artillery Systems.....	23
US Doctrine.....	23
Firefinder Radar Sets.....	26
Multiple Launched Rocket System.....	28
Soviet Field Artillery Doctrine and Weapon Systems.....	28
Soviet Doctrine.....	29
Soviet Counterfire System.....	30
4. Conclusion.....	32
5. Proposal.....	36
6. Endnotes.....	40
7. Bibliography.....	47

## 1. Introduction

In 1973 the United States Army adopted the Active Defense Doctrine as the answer to defending in Europe against a numerically superior Soviet force. The past decade has seen the emergence of a new and broader doctrine called AirLand Battle which has been marketed as more than a game plan for the European environment. It is an effort to meet the challenges posed by the commitments of the United States throughout the world. Yet, the AirLand Battle Doctrine goes beyond being just a doctrine to meet challenges; it is formed around a concept which stresses three levels in modern warfare: strategical, operational, and tactical. Moreover, this new doctrine incorporates the dynamics of combat power to be defined by maneuver, firepower, protection, and leadership. However, there is more to this doctrine than combat power. The doctrine has a theoretical underpinning which is founded upon the tenets of agility, initiative, depth, and synchronization. Additionally, this doctrine recognizes the shapes of the battlefield and thereby defines operations in the perspectives of deep, close, and rear operations.<sup>1</sup> The advent of the AirLand Battle Doctrine demands that each branch of the United States Army seek to understand its role in this doctrine and the Field Artillery is no exception.

During the late seventies, the Field Artillery sought to provide artillery officers with the assets and tactics necessary to conduct the Active Defense. The Field Artillery community foresaw two fundamental missions for the artillery: the direct support and the counterbattery missions with the direct support mission foremost. Moreover, these two missions were the responsibility of the division artillery commander. The Field Artillery recognized that the battle would be won or lost at the brigade level where artillery had to be the most responsive.<sup>2</sup> The

logical outgrowth of this tactical concept was to place as much corps artillery as possible in the divisions in either an attached or reinforcing role to augment the brigade fight and to conduct counterfire.<sup>3</sup>

The Field Artillery community realized that the Active Defense Doctrine effected the corps artillery in two major ways. First, the fight--being at brigade level--effectively distanced the corps artillery commander from the scene of the battle. Secondly, the corps frontages had increased to a point that there were an unmanageable number of targets in the corps sector, an overextended communication network, and a disjointed front across which to conduct its counterbattery mission.<sup>4</sup> Consequently, both the direct support and counterfire missions were given to the divisions.<sup>5</sup> These conflicts between the doctrine and the capabilities of the corps artillery organization led to structural as well as logistical changes within divisions.

Assets which had been traditionally at corps, i.e., longer range weapons and target acquisition battalions/batteries, found their way down to the divisions. The division artillery commander controlled not only the direct support mission, but also the counterfire mission. Consequently, the target acquisition battalions from corps became target acquisition batteries in divisions. Also, the composite 155/203mm and straight 203mm battalions were replaced with the MLRS as the Field Artillery's answer to a general support counterfire weapon. The 155/203mm and straight 203mm battalions were consolidated at corps into artillery brigades. These new brigades would be assigned to the divisions as deemed appropriate by the corps artillery commander to support the corps commander's maneuver plan. In the end, the corps artillery commander became a manager of cannon resources and was completely divorced from tactical artillery employment decisions and the counterfire mission. Only the Lance battalions remained at corps.

The purpose of this paper is to address this counterfire concept which arose out of the 1973 doctrinal framework. Specifically, we are seeking to answer the question: Does the current division artillery have the capability to perform both its direct support and counterfire missions effectively within the demands of the new AirLand Battle Doctrine? First, we will begin with a lessons learned examination of the field artillery missions from World War Two until the present. This will emphasize areas of concern which current artillery doctrine should consider. Second, we will continue with an examination of the field artillery missions under the AirLand Doctrine. Third, we will then compare and contrast the Soviet and United States artillery systems. Fourth, we will seek an understanding of the importance artillery plays in both armies, the density of the weapon systems of each on a European battlefield, and the relative effectiveness of both artillery structures. Finally, this examination will pose additional questions. Does the AirLand Doctrine increase the duties of the division artillery commander in his role as the division commander's fire support coordinator (FSCOORD)? If it does, can the division artillery commander meet all the demands of fire support given his assets? If he cannot meet his fire support obligations, is there a solution short of significant additional expenditures and radical reorganizations of artillery assets? Finally, how do the answers to these questions impact on doctrine? Our paper will conclude with a possible solution raised by the answers to these questions.

## 2. Historical Missions of the Field Artillery

The aim of this chapter is to provide a survey of lessons learned from four major wars--World War II, Korean War, Vietnam War, and the Arab-Israeli War of '73. These lessons are not meant to be definitive as the scope of this paper does not allow in depth analysis of artillery employment characteristics in various wars. We can, however, develop broad lessons as references for today's doctrine. What we will discuss is consistency in the characteristics of artillery employment. It is this consistency which needs to be addressed by today's doctrine and which may serve as a foundation for our analysis.

### World War II

The Second World War is a valuable source of lessons for the employment of artillery. So as not to divert the reader with a history lesson about the Field Artillery in Second World War, we will limit our analysis to the use of artillery in its direct support and its counterfire missions. A third mission of the field artillery was to interdict enemy movement and disrupt rear facilities.<sup>6</sup> We will cite both historical examples and historical studies in determining the effect of artillery as it relates to the above first two missions.

Without question, the greatest role of artillery in World War Two was as a close support weapon system for the infantry and armor teams. The fight for Pournoy and Sillegny (18-20 September 1944) during the Lorraine Campaign by Patton's Third Army provides an excellent example of the effects of German and American artillery in support of infantry and armoured forces. The XXth Corps comprised of the 5th Infantry Division and the 7th Armored Division had crossed the Moselle River. The XXth Corps planned to encircle Metz as a precursor to the capture of that historic city. The 7th Armored Division was to

...skirt the 'known' forts south of Metz, cross the Seille River, then begin a wheel to the northeast in the neighborhood of Verny, cross the Nied River, and circle to the rear of Metz...CCR [Combat Command Reserve], on the right, would be responsible for guarding the open flank...<sup>7</sup>

Before continuing, a brief review of the organization of the U.S. Armored and Infantry Divisions during 1944 would be useful. The armored division consisted of 10,937 officers and enlisted personnel with 186 medium and 77 light tanks. The division itself was divided into three combat commands designated Combat Commands A (CCA), B (CCB), and R (CCR). It had three artillery battalions assigned to its division artillery for a total of 54 self-propelled 105mm howitzers. The division was primarily used for exploitation after a penetration had been made with an infantry division. The structure reflected this in its high mobility, shock potential, and firepower.<sup>8</sup>

The infantry division consisted of 14,253 officers and enlisted personnel. The core of the organization was its 27 rifle companies. The 1944 infantry division was pared down from the prewar divisions by about 1,000 men, but this reduction was primarily in the headquarters and auxiliary troops. This reduction was required by shipping constraints and translated into a 15% decrease in cargo space. Each of the three regiments had six 105mm towed howitzers in their TOE. In addition, the division artillery had thirty-six 105mm towed howitzers and twelve 155mm towed howitzers. The infantry division relied on corps and army to provide specialized logistical and combat units. It was considered a general purpose organization which had some internal motorized capability.<sup>9</sup>

In the Lorraine, the CCR of the 7th Armored Division began its attack on the morning of 18 September with two companies from the 38th Armored Infantry Battalion and three medium tank companies from the 17th Tank Battalion. As soon as the unit left the concealment of the wood line, the artillery from the German

occupied Verny forts fired upon them. The counterbattery fire by four artillery battalions which were in support of the CCR's attack was ineffective. The German artillery was so accurate that eventually the American infantry refused to move forward, and the assault broke with only splendid leadership from a few key officers preventing a rout.<sup>10</sup>

The crossing of the Moselle River south of Nancy by the XIIth Corps on 11 September provides another example of the effects of artillery in close support. The 35th Infantry Division moved to its assault positions during early morning hours on the 10th. The 134th Infantry discovered a bridge which was mined, but still intact near Flavigny. By 2200 hours, the 2d Battalion of the 134th Infantry had crossed and dug themselves in on the east bank. Around midnight, the Germans fired artillery in preparation for their counterattack.<sup>11</sup>

Then the German field guns took over the job and with a few accurate salvos smashed the structure [the bridge], leaving the 2nd Battalion (Maj. F.C. Roecker, Jr.) stranded on the enemy bank. For two and a half hours enemy shells fell unrelentingly on the American position and casualties mounted. At last the German counterattack, delivered by infantry from the 104th Panzer Grenadier Regiment of the 15th Panzer Grenadier Division and paced by tanks, swept in on the decimated and shaken battalion.<sup>12</sup>

The Germans were not the only ones to benefit from effective artillery during the Lorraine Campaign. On 8 November, in bad weather, MG Eddy began the Third Army offensive to seize a bridgehead over the Rhine River. His artillery preparation for the assault was the "...most massive artillery preparation in Third Army history...All XII Corps' artillery plus 5 battalions borrowed from XX Corps--for a total of 42 battalions and 540 guns--poured 22,000 rounds on the stunned Germans."<sup>13</sup> This ability to mass fires within the corps was then characteristic of American artillery. At one time during the campaign, the XII Corps artillery with the help of the 33rd FA Brigade organized a preparation fire which involved 380

concentrations over a four hour period.<sup>14</sup> The key to this ability appears to have been the corps fire direction center (FDC).

...an infantry unit about to make an assault contacted the XX Corps FDC with a request for artillery support. The FDC...issued the orders to the appropriate artillery battalion. The battalion in turn assigned the mission to a battery which delivered 67 rounds on the target. The total elapsed time...of the mission was 6 minutes.<sup>15</sup>

It was also during the Lorraine Campaign that we observe the first attempt at suppressing antiaircraft weapons with massed artillery fire. The XIXth TAC flew 2,114 sorties between the 8th and 19th of November. This operation encountered significant enemy Flak batteries and suffered considerable losses. The solution to this increase in enemy antiaircraft coverage was the development of an anti-Flak program. This program used massed artillery fires against known enemy antiaircraft units. The campaign had some success as reported by the American pilots flying the support missions.<sup>16</sup>

Another important aspect of the artillery in World War Two was its ability to support the assaulting infantry and armored units. This and its ability to mass fires were a function of the corps artillery structure. The corps artillery contained only a Headquarters and Headquarters Battery as the organic base to which other artillery organizations could be attached. A corps artillery would normally control 13 field artillery battalions organized into groups. Artillery groups were activated on the ratio of one to every four artillery battalions assigned to the corps and would serve as the tactical headquarters for these artillery battalions.<sup>17</sup> The corps artillery controlled the assigned artillery groups through the corps FDC which had the capability to coordinate every artillery piece within its sector--to include division artillery--thereby making possible the rapid massing of artillery found in the Lorraine and other campaigns.<sup>18</sup>

In a number of cases, the corps within the Third Army operated on



frontages equal to that then associated with an army. During these periods of extended frontages, the corps artillery commander would utilize a field artillery group headquarters as an additional fire direction center under the supervision of the assistant corps artillery officer. Both, however, operated under the direction of the corps artillery commander.<sup>19</sup> It was through the ability to mass artillery fires that commanders most efficiently used the tubes available to influence the battle and the field artillery became recognized as "...the framework of attack and the bulwark of resistance."<sup>20</sup>

We have analyzed the effects of massed close support artillery fire during the Lorraine Campaign. It seems obvious that not only could the artillery provide devastating supporting fire to the other combat arms, but that this fire was most effective when it was massed. The lesson, therefore, is that artillery is most influential in direct support of the maneuver commander when it is massed on the battlefield. We will now turn our attention to the counterfire role of the corps artillery.

"Artillery fire was the magic cause of gun combat losses in normal combat in all theaters," states a study on artillery vulnerability prepared by the Historical Evaluation and Research Organization.<sup>21</sup> In fact, the study determined that counterfire accounted for close to 40% of artillery losses during the war followed by air attacks which registered a 21% attrition rate of artillery tubes.<sup>22</sup> Another aspect of counterfire, though, is the suppression of enemy weapon systems. The overall suppressive effects of artillery were arguably more significant than its destructive or casualty producing ability.<sup>23</sup> The capability to suppress opposing artillery or other weapon systems (tanks, crewserved weapons, etc.) required a high rate of fire. Suppressive counterfire had to be a continuous effort so as to ensure lasting effects,<sup>24</sup> though air attacks and artillery counterfire were most effective

in limiting these high rates of artillery fire.<sup>25</sup> The three principle constraints on artillery fire during the war were logistical shortages, attacks by air and opposing artillery, and forced displacement of artillery weapons.<sup>26</sup> It is clear, then, that counterfire was critical to the success of the field artillery during the Second World War. Joseph Adelman, in his work Preparedness for Counterfire, concludes that counterfire was the most important mission of the field artillery during the Second World War.<sup>27</sup> The lesson learned was that for artillery to be effective, it must insure that the counterfire program could provide friendly artillery dominance on the battlefield. How was this accomplished?

A key to effective counterfire was its timeliness. The enemy's artillery systems were identified and attacked before they could displace. This timeliness required trained corps artillery counterfire staffs. Untrained, improvised staffs actually degraded counterfire because they wasted ammunition, created friction within the artillery force, and uselessly exposed their own artillery to enemy counterfire.<sup>28</sup> A highly trained staff, on the other hand, could effectively manage the basic tools of counterfire production: a tactical situation map, a counterfire order of battle map, target indicators map, target/counterfire map, target categories, counterfire reference grid, target cards, target card file, and an evaluation/purging system.<sup>29</sup> Furthermore, a knowledgeable staff was required to control the agencies which gathered counterbattery intelligence and correlated data from these agencies.<sup>30</sup> The After Action Report of the Third Army describes the various sources of data for the corps counterfire staff.

During the campaign in Europe it has been reaffirmed that a constant search must be made to locate hostile positions, assembly areas, command posts and lines of communications. Agencies that have proven value for this purpose are as follows: Photo interpretation, Field artillery observation battalions, Artillery Air OPs, Ground observers, Arty/R pilots, Prisoner of War Interrogation Teams, Military Intelligence Interrogation Teams, Artillery Shellrep teams, Intelligence personnel of all echelons.

Close cooperation and frequent liaison between artillery units and the above agencies can result in accurate locations and confirmations of targets for our artillery and tactical support.<sup>31</sup>

The Soviets in World War II also learned the lesson that effective counterfire required the integration of all intelligence gathering assets available to the commander at all echelons. In an article written for the Field Artillery Journal, a Soviet officer describes how the work of the scouts was a major factor in a superb victory. "...[O]n a comparatively narrow sector of the breakthrough (6 kilometers) 272 targets were charted among them 40 gun batteries. In the course of a two hour bombardment Soviet gunners, manning over 1000 guns, disabled 203 targets, among them all 40 German batteries."<sup>32</sup> So we see that a systematic approach to counterfire operations was not peculiarly American.

The lessons from this counterfire analysis are that effective counterfire requires a systematic approach which incorporates all intelligence gathering assets, that this program should be centralized at the level which can most readily respond to the data, and that counterfire as a suppressive or destructive mission must be continuous and relatively independent of the direct support mission. This last point is self-evident when considering that a systematic counterfire operation interrupted by direct support missions will become an 'on again off again' affair. Responsiveness is lost and identified targets will displace before they can be engaged. An effective counterfire program requires vigorous action. It must attack targets whenever and wherever identified by the intelligent gathering assets. It must not be reactive, but must be proactive. It is not of value if the enemy can seize the initiative and disrupt our plans by his counterpreparation fires.

#### Korean War

Our previous analysis discussed the two most prominent missions of the

field artillery during World War Two--direct support and counterfire. Our discussion of the use of artillery in Korea will build on the lessons of the World War Two experience. The initial artillery commitment was not significant. After all, the first deployment of U.S. forces to Korea consisted of two skeletal corps with four understrength divisions. The divisional artillery units were at two-thirds strength, and the corps supporting arms such as artillery did not exist.<sup>33</sup> However, once the U.S. army was there in force, firepower began to play a major role in this war. This was especially true with the advent of the peace negotiations and the general reluctance to jeopardize any more lives. Firepower became a substitute for manpower. Between October and November of 1951, the United Nations Command fired eight rounds of artillery and four rounds of mortar for each round fired by the enemy.<sup>34</sup> The Korean experience also saw another attempt to use artillery in the role of suppressing enemy antiaircraft systems.

The direct support role of artillery was as critical in this war as in World War Two. Examples of the use of artillery in this mission were evident during the capture of Seoul by the 1st Marine Division, the 7th Infantry Division, and Xth U.S. Corps. The North Koreans used their artillery effectively against assaults of the 1st Marine Division and exacted heavy casualties from two battalions of Marines.<sup>35</sup> On the other hand, the U.S. Army artillery successfully interdicted fleeing North Koreans from Seoul during the Battle of the Barricades on 25 September. This interdiction fire was conducted by the mass of corps artillery.<sup>36</sup> On the 26th of September the 1st Marine Division used massed artillery fire supported by mortars to decimate a North Korean counterattack. The counterattack force had consisted of 700 North Koreans with twelve tanks, two self-propelled guns, and 120mm mortar fire.<sup>37</sup> Finally, the 2d Battalion, 31st Infantry of the 7th Division used the fires from a supporting FA battalion with an additional battery to repulse an

armored attack. This occurred on the 24th of September just south of Seoul. The next day, an additional battalion of artillery was moved into their area to provide further support.<sup>38</sup> In the fight for Seoul artillery was the king of the attack and the buttress of the defense.

During the early stages of the Korean Conflict, both the North Koreans and the United Nations Command conducted counterfire. During the North Korean attacks on the Pusan Perimeter, for instance, the North Koreans engaged two battalions of U.S. artillery on the 7th of September causing the displacements of two batteries.<sup>39</sup> Sensitive to the effects of artillery, the North Koreans, at the beginning of the war, would bypass infantry units so as to attack artillery batteries.<sup>40</sup> Later in the war the suppression of enemy artillery fire became a major mission of U.S. corps artillery. The North Korean artillery was driving off assaulting units trying to capture the Triangle Hill Sniper Ridge in the IXth Corps sector. General Van Fleet, the Eighth Army Commander, decided to settle the matter by destroying the enemy's artillery. He attached the 1st Observation Battalion, two 8-inch battalions, and two 155mm battalions from the U.S. 1st and Xth Corps to the IXth Corps so as to conduct counterbattery fire in the IXth Corps sector.<sup>41</sup> Again it was clear that effective counterfire required a heavy concentration of artillery assets dedicated solely to the counterbattery mission.

Another mission which General Van Fleet accomplished with notable success was the suppression of enemy antiaircraft weapon systems. During the period from September to October 1951, the Fifth Air Force commander, General Barcus, requested support from the Eighth Army artillery units to suppress enemy air defense weapons. These suppression missions were to protect fighter bombers conducting close support strikes. At the end of October after flying 1,816 sorties, the Fifth Air Force had suffered only one plane lost and thirteen damaged by

enemy flak. Statistics from previous months indicated that the Air Force should have lost four to five planes and approximately 64 damaged. The technique was to use IXth Corps artillery against suspected AAA sites as the planes approached the area. The artillery fires consisted of proximity fuze shells for this first phase. While the planes were in the area and during their egress, the artillery would fire quick fuze ammunition. This technique required extensive artillery support from the IXth Corps.<sup>42</sup>

The events from Korea clearly support the lessons learned from World War Two. Effective direct support, counterfire, and suppression of enemy AAA sites all required extensive artillery assets. Each one of these missions were unique and demanded systematic planning. Furthermore, the assets needed for their success consistently exceeded the capabilities of divisions and were planned at corps or army level.

#### Vietnam War

The Vietnam War cannot be described as a conventional war such as the Korean War. The mission, enemy, and terrain were entirely different. The artillery employment before the Vietnam War was that sizeable amounts of artillery from the theater army would be made available to the division artilleries in order to fight the close battle.<sup>43</sup> Even though there was a sizeable amount of artillery deployed to Vietnam--more than two battalions for each combat brigade--they were employed differently than in the past. Usually one battalion would be in direct support of a brigade and the other battalion would provide augmenting fires or area protection.<sup>44</sup> Artillery battalions were dispersed so as to fire support throughout the maneuver brigades' sizeable areas of responsibilities. Both the size of the brigade areas and the range limitations degraded the capabilities of the artillery to mass fires.<sup>45</sup> This wide dispersal of artillery assets led to other changes in the

traditional employment of artillery.

The fire direction had been centralized before Vietnam in order that artillery fires could be massed. This was no longer needed. Artillery fire direction, therefore, was placed at the battery (or platoon where the artillery battery conducted split operations) level. In this manner, the artillery fires would be controlled at the level that the artillery commander could best appreciate the needs of the supported unit.<sup>46</sup> The fire direction role of the division artillery commander was significantly reduced in this type of arrangement. But usually when one area is reduced, another is increased. The wide dispersal of the division artillery led to an increase in the supply and maintenance problems. The division artillery staff was forced to develop new ways to provide support to their artillery battalions in support of combat brigades.<sup>47</sup>

Another area which changed was that of counterfire. The need for the field force artillery to control the counterfire in its sector was practically nonexistent with the increased dispersal of artillery assets. The counterfire and countermortar fires were preplanned and generally unobserved. These fires were executed if the fire base was attacked by enemy indirect fire systems. The planning process would normally consist of a field artillery forward observer or liaison artillery officer who would pick likely enemy firing positions from an aerial reconnaissance photograph. The firing data to these suspected locations would be computed and the fire plan would be retained at the battery fire direction center for immediate execution. Though this procedure was hit or miss, it was effective.<sup>48</sup>

Careful planning of radar assets by elements from the 1st Infantry Division, 9th Infantry Division, 25th Infantry Division, and the 173rd Airborne Brigade in OPERATION JUNCTION CITY (23 Feb-14 May 1967) resulted in

significant counterfire success. The radar assets were emplaced such that they were mutually supporting with overlapping coverage of the supported units and the artillery fire bases. If one base came under fire, the radars from another base would generally pickup the rounds before the radar from the base being attacked. The acquisition radar would then transmit the fire mission to a another artillery unit. This not only increased counterfire responsiveness, but it permitted the base under fire to continue with its direct support mission.<sup>49</sup> There were some difficulties with radars in the counterfire role. The two most common problems were that the radars during the Vietnam era had small scan sectors which made it difficult to overlap their coverage, and an inability to locate low trajectory firing units effectively.<sup>50</sup>

The proper location of the target acquisition systems was another issue. In the days before Vietnam, the corps artillery had conducted the counterfire battle. The target acquisition systems were placed at corps level in order to support this fire plan. However, in Vietnam the Field Force assets were so widely dispersed that this centralization was no longer practical. Responsiveness was greatly reduced in most cases and the requirement for a sizeable target acquisition capability at the division artillery was realized. Most of these assets were in fact pushed down to the artillery battalions in the the belief that the local needs of the commander would determine which targets should be engaged by the artillery assets.<sup>51</sup> This reasoning process was later inculcated into the Active Defense with the assumption that the modern battlefield was so far removed from corps that corps artillery would not be responsive to the counterfire needs of committed FA battalions.<sup>52</sup>

Finally, the artillery liaison sections at maneuver battalion and brigade levels were forced to devote an inordinate amount of time to the management of



airspace. This coordination process was accomplished at the detriment of other artillery missions, especially the coordination of supporting fires. The prime cause for this requirement was the extensive use of helicopters and close air support during the Vietnam War--not unlike what would be found in Europe today.<sup>53</sup>

All of these lessons from Vietnam were incorporated, sometimes in slightly altered form, into the artillery's contribution to the Active Defense. It was perceived that there were many similarities between Vietnam and NATO warfare. The battles would be primarily brigade fights distant from the corps commander. The target acquisition assets were best situated at the lowest level to support the brigade fight. Centralization of firepower and the ability to mass would not be practical or as important. The battle would be one of brigade maneuver. Yet, the one truly conventional battle fought in Vietnam seemed to indicate otherwise.

OPERATION PEGASUS (31 Mar-14 Apr 1968) was the fight to relieve Khe Sanh. During this operation, a total of 31 artillery batteries or approximately 10 battalions were employed in support of the 1st Air Cavalry Division. These batteries provided not only direct support, but also counterbattery fires against 152mm and 130mm enemy howitzer units. This massive fire support was critical to the success of the operation indicating that massed artillery fire was still important to the success of a conventional battle.<sup>54</sup> Regardless, the other lessons of the Vietnam War, as discussed, had a significant impact on the artillery doctrine developed for the Active Defense.

#### Arab-Israeli War of '73

To this point we have analyzed three different and diverse forms of conflicts in which we found American participation. The last of these, the Vietnam War, had an important impact upon the artillery's view of its role in the Active Defense Doctrine. The purpose of this section is to highlight some of the lessons

learned from the Arab-Israeli War of 1973 as an example of a high intensity conflict between countries employing the most modern technology available to the United States and the Soviet Union. Many have described this conflict as a mini-European battle. It is for this reason that we have selected to conclude our historical analysis with this war. If it was truly a representation of a European battlefield, then it should provide some stimulating lessons, although its similarities to a modern war in Europe should not be overstressed. It was, after all, a desert conflict conducted in a Mediterranean climate in terrain quite different from Western Germany.

The ability of the Egyptians to eliminate the Israeli Air Force from the battlefield was the first important lesson of the war. Effective air defense through the employment of army air defense weapons was key in defeating Israeli close support air.<sup>55</sup> "...[E]ven with high performance aircraft, they suffered nearly intolerable losses to Egyptian and Syrian air defense weapons, losing 50 aircraft in the first three days."<sup>56</sup> This feature of the war led the Israelis to a reappraisal of the role of their indirect fire systems.<sup>57</sup> How the Israelis used their indirect fire systems is very illuminating.

First, it was confirmed that massed artillery fire can defeat tanks.<sup>58</sup> On many occasions, three regiments of artillery (thirty-six 155mm guns in the Israeli structure, slightly larger than an American artillery 155mm battalion) were able to stop up to a battalion of tanks with concentrations of 10 volleys in fire-for-effect.<sup>59</sup> In order to achieve this concentration against enemy tanks, the Israelis did not dissipate their artillery assets. They could not afford to lose "...any of them providing first aid for infantry subalterns..."<sup>60</sup> The second lesson the Israelis learned was that artillery was in many cases "...better employed in general support (GS) rather than in direct support (DS)..."<sup>61</sup> Divisional artillery should be

(GS) rather than in direct support (DS)..."<sup>61</sup> Divisional artillery should be controlled from the division fire support center in order to achieve this massing capability and to increase the responsiveness of fires to the division's effort.<sup>62</sup> This also permitted better control of artillery assets given that Egyptian counterfire required Israeli artillery batteries to move four to five times during a day.<sup>63</sup> The more centralized control permitted the division artillery commander to orchestrate the overall artillery effort. Two other lessons learned from this war, but from the Soviet perspective, were, first, the suppression of antitank systems through artillery firepower was very important to the success of armored attacks; and, second, there was a definite need for armoured self-propelled howitzers to reduce vulnerability to counterfire.<sup>64</sup>

#### Summary

Before proceeding to the next chapter, we should take time to review what we have learned from the four wars which we analyzed:

1. Artillery could provide effective supporting fire to the other combat arms, but this fire was most effective when it was massed. (World War II and the Arab-Israeli War)
2. A counterfire program could provide friendly artillery dominance on the battlefield. This counterfire program required a knowledgeable staff to control the agencies which gathered counterbattery intelligence and to correlate the data from these agencies. (World War II)
3. Effective counterfire requires a systematic approach which incorporates the integration of intelligence gathering assets. This program should be centralized at the level which can most readily respond to the data, and that counterfire as a suppressive or destructive mission must be continuous and relatively independent of the direct support mission. (World War II)

4. An effective counterfire program requires initiative. It must attack targets whenever and wherever identified by the intelligence gathering assets. It must not be reactive, but must be proactive. (World War II and the Vietnam War)

5. Effective direct support, counterfire, and suppression of enemy AAA sites all required extensive artillery assets. Each one of these missions was unique and required systematic planning. Furthermore, the assets needed for success consistently exceeded the capabilities of divisions and were planned at corps or army level. (Korean War)

6. The engagements on a dispersed battlefield would be primarily brigade fights distant from the corps commander. (Vietnam War)

7. Target acquisition assets on a dispersed battlefield were needed at the lowest level to support the brigade fight in depth. (Vietnam War)

8. Centralization of firepower and the ability to mass was not seen as important on a dispersed battlefield. (Vietnam War)

9. A unit receiving counterfire was in a dilemma between continuing their direct support mission or conducting counterfire. This was resolved by assigning the counterfire mission to a unit distinct from the unit receiving counterfire. (Vietnam War)

10. Massed artillery fire can defeat tanks. (Arab-Israeli War)

11. Artillery is better employed in a general support rather than in a direct support role. Divisional artillery should be controlled from the division fire support center in order to achieve this massing capability and to increase the responsiveness of fires to the division's effort. (Arab-Israeli War)

12. The suppression of antitank systems through artillery firepower was very important to the success of armored attacks. (Arab-Israeli War)

### 3. AirLand Battle, US Artillery, and the Threat

In the introduction, we discussed the development of artillery doctrine from the time of the Active Defense to the AirLand Battle. It was evident that the doctrine at that time was concerned with the direct support and counterfire missions of the division artillery. However, AirLand Battle Doctrine has evolved to expand the battlefield from merely brigade size engagements to corps battles.<sup>65</sup> This is significant. There is more to the synchronization of combat power than a brigade fight. The purpose of this chapter will be to examine the division artillery's expanding missions in the AirLand Battle Doctrine and its capability to successfully meet these new demands. It is this expanding role of field artillery and its relationship to Soviet capabilities which will hold some important implications for division and corps artillery commanders.

#### AirLand Battle Doctrine and the Principles of Fire Support

FC 6-20, Principles of Fire Support (Coordinating Draft), highlights four tasks of the fire support coordinator: to support the forces in contact, to support the force commander's battle plan, to synchronize fire support, and to sustain fire support.<sup>66</sup> FC 6-20 identifies close air support (CAS), suppression of enemy air defense (SEAD), direct support artillery, and mortars as the fires which support the close battle. Counterfire, SEAD, and deep fires to include battlefield air interdiction (BAI) (at certain echelons) support the deep attack. Synchronization is a critical role of the FSCOORD. "The FSCOORD is the driving force behind fire support coordination."<sup>67</sup> However, more than just these four principles concern the division artillery (Divarty) commander as the FSCOORD of the division commander.

The 1984 edition of FM 6-20, Fire Support in Combined Arms Operations, provides a more complete breakdown of the tasks. It lists seventeen general fire

support responsibilities. These responsibilities require the FSCoord to be an adviser to the supported unit commander, prioritize fire support assets, attack high payoff targets, interdict follow-on forces, provide counterfires, execute SEAD fires, attack targets beyond the range of direct fire weapons, manage the fire support facility, maintain current status of fire support assets, disseminate the fire support plan, coordinate the positioning of fire support assets, recommend fire support coordinating measures, gather and disseminate target data to all echelons above, below and laterally, coordinate fires in the zone of the force commander, resolve fire support conflicts, locate enemy artillery, and support contingency operations.<sup>68</sup> The key to these multitude of tasks is the synchronization of the fire support system by the Divarty commander and his staff.

The fire support system synchronization "...can be found in the decide-detect-deliver approach to targeting and battle management."<sup>69</sup> This methodology serves the fire support system better than the detect-decide-deliver methodology. (Deciding is the prioritizing of targets; detecting is the acquiring of targets; delivering is the attacking of targets). The Field Artillery doctrine accepts that the "...vast array of targets anticipated on the battlefield will generate competing demands for fire support--demands that could exceed the capability of the system to respond to all requirements."<sup>70</sup> Only by prioritizing the how and when of his fire support will the force commander hope to meet his critical needs. The decide and detect elements are the process of synchronization, while the deliver is the product.<sup>71</sup> This synchronization of the fire support system complements other fighting arms of the division. This complementary effect of synchronizing fire support gives the force commander the initiative in supporting his forces in contact and his overall battle plan.

The fire support system supports the forces in contact by protecting them

and ensuring their freedom of maneuver against the enemy. The system accomplishes this in the defense by supporting the covering force, the forces in the main battle area (MBA), the forces engaged in the deep battle, and the rear area commander. Furthermore, this requires that the fire support system conducts counterpreparation fires in order to disrupt the enemy's assembly areas and avenues of approach and the conduct of SEAD missions for friendly aircraft within the area of operations. During offensive operations, the fire support provides preparation fires, counter-counterpreparation fires, suppression of direct fire weapons, and responsive support to the assaulting elements.<sup>72</sup> The fire support of the battle plan differs from the support of the forces in contact in that it systematically attacks high payoff targets (targets which significantly impair the enemy's combat capabilities) essential to ensure the force commander's freedom of action.

Critical to the success of the battle plan is the understanding that fire support is conducted solely for the force commander. It is the force commander's way of influencing and shaping the battle. He accomplishes this by attacking those high payoff targets which have potential for interfering with his scheme of maneuver. This may include command and control nodes, counterfire, acquiring and attacking enemy reserves, deception by false preparations, achieving surprise through the shock of sudden massed firepower, conducting SEAD missions, harassing and interdicting enemy forces, disorganizing assembly areas, containing enemy forces, preventing their disengagement from the battle, etc.<sup>73</sup> The importance of these principles together with the protection of the fire support system, i.e., the command and control, target acquisition, and fire support resources, is one of the critical variables in the AirLand Battle's formula of combat power.

Combat power consists of maneuver, firepower, protection, and leadership. It is through firepower that the force commander seeks to destroy the enemy's

ability and will to fight. As FM 100-5 states,

Firepower facilitates maneuver by suppressing the enemy's fires and disrupting the movement of his forces. Firepower exploits maneuver by neutralizing the enemy's tactical forces and destroying his ability and will to fight. Firepower may also be used independent<sup>74</sup> of maneuver to destroy, delay, or disrupt uncommitted enemy forces.

We find, then, that these principles of fire support are integral to the AirLand Doctrine. These principles must serve, therefore, as the measure of the effectiveness of our current field artillery structure. It is to this structure that we turn our inquiry.

#### Field Artillery Doctrine and Artillery Systems

We have already discussed some artillery doctrinal considerations for the Active Defense and the AirLand Battle. Furthermore, we have briefly described in the introductory remarks the general concept of artillery employment and the counterfire missions. We will now pursue a more in depth analysis of this Field Artillery doctrine--a doctrine which Field Artillery proponents believe has not changed with the advent of AirLand Battle Doctrine.<sup>75</sup>

#### US Doctrine

During the mid-70's the artillery weapons then in the inventory were not able to range a corps front<sup>76</sup>--assuming that the corps frontages would be from 80-110 kilometers as opposed to WWII frontages of a corps from 25-40 kilometers.<sup>77</sup> In addition to the limitation dictated by weapon capability, experience and wargaming indicated that the corps artillery was removed both in distance and time from running an effective counterfire program.<sup>78</sup> Finally, it was decided that counterfire required careful judgment. If the enemy fire was not hurting the unit, then the division artillery commander might opt not to attack the offending enemy artillery battalion.<sup>79</sup> The division artillery tactical operation center (TOC) was responsible for performing targeting, the control of counterfire, the controlling of



other high payoff target engagements, and advising the division artillery commander in his role as the division FSCOORD.<sup>80</sup> The advent of AirLand Battle has not changed the artillery community's commitment to the maintaining of the counterfire function at the division level.<sup>81</sup> Furthermore, the artillery orientation has remained one of direct support.<sup>82</sup> Recent studies, though, have questioned whether the division artillery can provide the responsive command and control necessary for the counterfire role and accomplish their direct support mission.

When we discuss counterfire, we should remember that in World War Two the counterfire support for the corps artillery commander came from target acquisition battalions. These battalions provided extensive command and control of acquisition assets in the corps sector. Even though today's division covers the same ground as a corps in World War Two, a division only has a single target acquisition battery.<sup>83</sup> This target acquisition battery has no organic operations section, and the battery commander provides the liaison between the counterfire officer at the division artillery TOC and the target acquisition elements of the target acquisition battery.<sup>84</sup> The 1979 study Counterfire Campaign Analysis stated that "...significant increases in calls for either target servicing or counterfire would saturate the artillery."<sup>85</sup> More recent studies have reinforced this conclusion.

Typically the Tactical Fire Direction System (TACFIRE) subscriber net includes the direct support (DS) battalions, the firing batteries and their Battery Computer System (BCS), the battalions' Forward Support Officers (FSOs), and the four Fire Support (Fist) Teams which include a total of 36 platoon forward observation teams in each maneuver brigade. All of these plus the brigade Fire Support Elements (FSE) must contend for time on the net with other information sources such as the counterfire radars.<sup>86</sup> The TACFIRE system has inherently created a data flood through its ability to process information. This has forced the need to

do extensive fire support planning and coordination of intelligence as an adjunct to TACFIRE so as to prevent this flood from being a fire support bottleneck.<sup>87</sup> Furthermore, certain artillery subscribers will generate data not necessarily concerned with their mission such as the target acquisition battery. This data must be passed by the division artillery TOC to those agencies in need of such data.<sup>88</sup>

Fire support studies have also shown that during high activity periods in wargaming exercises, the battalion TACFIRE computer became a bottleneck. This arose as a consequence of managing the volume of data compiled from target acquisition assets plus an overwhelming amount of intelligence from the supported maneuver brigade.<sup>89</sup> The target production elements could easily process 250 to 300 indicators in one hour. One estimate placed the number at 1,364 targets which could be developed through TACFIRE Artillery Target Intelligence (ATI).<sup>90</sup> A DS battalion could be required to process more than 1,233 incoming and 1,151 outgoing messages during peak periods.<sup>91</sup> Additionally, it was discovered during evaluations of the fire support system that forward observers would submit more than twice as many urgent requests than expected.<sup>92</sup> This increase in urgent messages translated into a 5.2 minute time delay for the first round. Of this time delay, 2.1 minutes were directly attributable to communication and queue delay. These tests were conducted with the forward observers reading from prepared fire mission cue cards, and therefore are conservative.<sup>93</sup> In battle, the time delays would be greater. In discussions with a former artillery battalion operations officer, the actual field training times for his battalion were approximately 9 minutes delay for the first round with a 4 minute communications delay.<sup>94</sup> The consequence of such delays is simple. "Fire control time, if longer than the average enemy mission time, permits the successful use of shoot-and-scoot tactics."<sup>95</sup>

We have discussed some of the inherent shortcomings of the current

command and control system for the employment of artillery at the division artillery level. Before leaving this discussion, we need to highlight two other key elements of the counterfire solution: the Firefinder Radar Sets and the Multiple Launched Rocket System (MLRS).

#### Firefinder Radar Sets

The two radars for the identification of counterfire targets are the AN/TPQ-36 and the AN/TPQ-37 (Firefinder Radar Sets). The AN/TPQ-36 is generally deployed within two to four kilometers of the front lines. It will quickly locate enemy mortars and provide the data to the associated artillery battalion. There will be one AN/TPQ-36 assigned to each direct support artillery battalion within the division.<sup>96</sup> The AN/TPQ-37 is deployed further to the rear or on the flanks of the division. It has the capability of censoring out the indirect fire from mortars. There are two assigned per division artillery for the deeper counterfire targets,<sup>97</sup> and each has an unclassified acquisition range of 50 kilometers.<sup>98</sup> These radars can be linked directly to the artillery unit conducting counterfire or to the division artillery TOC. An evaluation conducted in 1982 reached the following conclusions:

1. The interface between Firefinder and TACFIRE achieved a 76.2% success rate. This is an overall communications success rate based on receiving an acknowledgment from the TACFIRE unit. In the case of passing target information, four attempts were allowed before recording an interface failure.<sup>99</sup>

2. The interface between TACFIRE to Firefinder achieved a 95.8% success rate. This was an overall communication success rate based on receiving an acknowledgment from Firefinder for each attempt to transmit.<sup>100</sup>

3. The Divarty TOC took approximately 21.79 minutes to transmit the fire mission to another TACFIRE unit. The Divarty TOC took approximately 41.32

minutes to transmit intelligence messages to another TACFIRE unit.<sup>101</sup>

4. The battalion FDCs took approximately 6.5 minutes to pass the fire mission to an organic firing unit.<sup>102</sup>

5. The processing time from all sources (radar and other intelligence gathering elements) to the DS artillery battalion was 10.87 minutes, 5.8 minutes to the general support (GS) artillery battalion, and 38.02 minutes to Divarty TOC.<sup>103</sup>

6. The time from identification of target by Firefinder until confirmation by the receiving unit was approximately 2.0 minutes.<sup>104</sup>

7. The total processing time for radar input to the DS battalion was 41.65 minutes, 9.46 minutes to the GS battalion.<sup>105</sup>

8. Though these tests were conducted so that the counterfire officer responded only to targets acquired by the Firefinder radars and not from any other target intelligence asset,<sup>106</sup> the counterfire officer quickly became overwhelmed by the number of available targets.<sup>107</sup>

9. Overall the evaluation determined that the counterfire officer was able to meet the criteria set for the evaluation.<sup>108</sup> However, there were serious shortcomings noted in the area of training and the employment of the radars.<sup>109</sup>

10. Finally, the 1st Cavalry Division Artillery After Action Report from the test stated:

The volume of traffic and the amount of decisions required at the ACC [artillery control console] would keep an FDO [fire direction officer] occupied full time. Operations without an FDO require [sic] a significant amount of the operations duty officers [sic] time to be spent away from the support of the current battle.<sup>110</sup>

The report also recommended that personnel from the GS artillery battalion augment the Divarty TOC to relieve the workload.<sup>111</sup> This calls into question the criteria used to evaluate the counterfire officer's ability to conduct his mission.

### Multiple Launched Rocket System

The MLRS has a planning range of 11-30 kilometers (as compared to 18.1 kilometers for the 155mm howitzer and 22.9 kilometers for the 203mm howitzer).<sup>112</sup> It is a "...fully tracked, highly mobile, rapid-fire, free-flight rocket system that is designed to complement cannon artillery in the counterfire and defense suppression roles."<sup>113</sup> FC 6-60-20 goes on to say, "The types of fire support tasks that the MLRS battalion can perform are counterfire, suppression of enemy air defense (SEAD) fires, interdiction, and the general support missions in support of corps and division operations."<sup>114</sup> Though it is possible to use the MLRS against high payoff targets other than enemy artillery and air defense fires, the stated Field Artillery position focuses on counterfire and SEAD. The firepower of one MLRS launcher firing 12 rockets is equivalent to eleven 155mm batteries firing one volley of DPICM.<sup>115</sup> We will now turn our attention to the Soviet artillery system.

### Soviet Field Artillery Doctrine and Weapon Systems

The Soviet Army has always been a firm believer in the utility of massive artillery fire. In many of their major operations against German forces in 1944-1945, the Soviet artillery was employed in concentrations of 250-300 weapons per kilometer in particular breakthrough sectors (or about 8-12.5 battalions of 155mm cannon artillery).<sup>116</sup>

During the Vislo-Oder Operation (January, 1945), for instance, on a 33 kilometer front, there were 223 guns plus 30 artillery rocket launchers per kilometer (about 10 US artillery 155mm battalions). In this 33 kilometer front, the Soviet artillery fired 36,500 shells per kilometer per hour.<sup>117</sup> Today, we could expect artillery densities from 60-100 weapons/kilometer against NATO prepared defensive positions, 60-80 weapons/kilometer against a NATO hasty defense, and 40 weapons/kilometer

along a Soviet minor axis.<sup>118</sup> If it is true, as it is often assumed, that we can expect a ratio of four Soviet divisions to one United States division on the NATO front,<sup>119</sup> then that would equate to four division artillery groups (DAG) of four artillery battalions each, and 16 regimental artillery groups (RAG) each with one artillery battalion per U.S. Divarty. That would total approximately 32 battalions of Soviet organic artillery battalions in addition to 4 battalions of BM-21's opposing three US 155mm artillery battalions and one battery of MLRS.<sup>120</sup> This is a better than 10:1 ratio in cannon artillery and 8:1 ratio in rocket launchers. It is clear that the Soviet Army still anticipates a dominant role for the artillery in the next battle. In effect, they seem to support Arthur Hercz's thesis that: "A good case can be made for the idea that FA no longer plays a subsidiary role; rather that most modern battles seem to be won by massed firepower (FA and air) after which the maneuver elements move in to occupy the area and mop up."<sup>121</sup>

#### Soviet Doctrine

The Soviet command and control structure is extremely centralized. Soviet commanders view centralization as that element which provides the flexibility to place the maximum effort at the decisive point.<sup>122</sup> They believe that our command and control structure is too complex for the modern battlefield and is "...seriously flawed because it becomes heavily dependent on a communications network which can be disrupted and targeted."<sup>123</sup> The Soviets feel that the integration of fire support is "...the decisive element on the conventional battlefield. In the offensive, it is the principal means of achieving an advantageous force ratio over the enemy..."<sup>124</sup> The Soviets emphasis on artillery is a continual process. By 1990 the Soviet Army is expected to increase their number of artillery weapon systems by at least 5,000 tubes.<sup>125</sup> In fact, a considerable amount of this increase came after the lessons they learned from the Arab-Israeli War of '73.

Additionally, they have begun the deployment of the 2S5 155mm self-propelled gun (range of 28.5 kilometers) and the 2S7 203mm self-propelled gun (range of 30.0 kilometers).<sup>126</sup> It is quite clear that the Soviet Army believes in artillery dominance.

To achieve this fire support dominance, the Soviets generally echelon their artillery in the following manner:<sup>127</sup>

=====

Regimental Artillery Groups (RAGs).....	1-4 kilometers from the FEBA*
Divisional Artillery Groups (DAGs).....	3-6 kilometers from the FEBA*
Mortars.....	500-1000 meters from the FEBA*
MRLs (DAGs).....	3-6 kilometers from the FEBA**

\*The firing batteries are separated by 1000 meters

\*\*The firing batteries are separated by 1000-2000 meters

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It is obvious from the positioning of Soviet artillery that they fall within what is considered the area of operations for a maneuver brigade or the forward portion of the division commander's area of operations.<sup>128</sup> Doctrinally, the attack of these assets should be a responsibility of the division commander, however, the number of artillery battalions and the limited MLRS assets organic to the division make this practically impossible for the division artillery commander unless he is heavily augmented from corps. The shortcoming in this arrangement is that the corps commander must abandon some flexibility by allocating out his fire support systems,<sup>129</sup> and that the additional resources place a strain on the division artillery commander's austere staff.

#### Soviet Counterfire System

The Soviets recognize that target acquisition is key to an effective counterfire program, but their acquisition systems are limited. These target

acquisition systems consist of sound ranging (20 kilometers with a 25-100 meters accuracy), ground surveillance radar (20 kilometers range), and their countermortar radar (10 kilometers range).<sup>130</sup> Their primary counterfire systems are the BM-27s (a 220mm rocket launcher with a range of 35-40 kilometers), the 2S5s (a range of 27+ kilometers), and the M-1976 (with a range of 30 kilometers). All of these are elements of the AAGs.<sup>131</sup> The RAGs and DAGs with their 122mm artillery battalions (a range of 15.3 kilometers) and the 152mm 2S3 artillery battalions (a range of 17.23 kilometers) are utilized primarily for the direct support mission.<sup>132</sup>



#### 4. Conclusion

We have examined the counterfire role of artillery both historically and doctrinally. We have also analyzed Soviet artillery doctrine and counterfire systems. We can now answer our thesis question. In order for our fire support system to be effective and survivable, we must have firm control of fire support assets.<sup>133</sup> Historical experience shows that all of the missions envisioned by AirLand Battle (direct support, counterfire, SEAD, interdiction, deep attack, etc.) require detailed planning, extensive artillery assets, and a responsive command and control system. It has been demonstrated that in the area of command and control the division artillery commander's current staff is not functionally adequate. The principles of fire support in the AirLand Battle doctrine define four tasks: support of forces in contact, support of the force commander's plan, synchronization of fire support assets, and sustainment of the fire support system. The array of targets which compete for the division artillery commander's span of control has led to a decide-detect-deliver methodology for the field artillery. This methodology has some important shortcomings in the area of counterfire.

It assumes that the unit receiving enemy artillery fire is the one most proper to decide the necessity of conducting counterfire. This ignores the possibility that the enemy's artillery unit firing may be outside the division sector. The system seems to be based on area responsibility rather than a systematic approach to achieving artillery dominance.<sup>134</sup> Counterfire is not a function of troop disposition, but of threat. This has other implications.

Counterfire intelligence assets at all levels need to be placed to provide the best acquisition of the enemy artillery systems.<sup>135</sup> In World War II it was learned that only corps had the frontage stability which lent itself to effective

emplacement of the acquisition radars and intelligence gathering assets. In the present doctrine, divisions which move in or out of sectors will take their target acquisition assets with them. Boundaries are changed for divisions depending upon the tactical missions.<sup>136</sup> Disruption of the target acquisition radars (the primary acquisition asset available for the artillery) seriously hampers the counterfire mission. This supports the proposition that counterfires are most effectively employed at that centralized level of command which has the geographical area necessary for efficient emplacement of counterfire assets, the weapons to range the enemy delivery systems, and the control of the necessary intelligence assets. Centralization is the key.<sup>137</sup>

Additionally, there is a need for target analysis which can judge the importance of enemy units based upon their threat to the operational plan. This would prevent seemingly harmless targets from escaping through the counterfire net.<sup>138</sup> Also, experience shows that counterfire cannot be a sometime event. Our artillery is able to coerce enemy units to move by effective suppressive fire,<sup>139</sup> but suppressive fire must be a continuous operation which does not permit the enemy any respite.<sup>140</sup> However, we know that there are other missions which a Divarty commander must accomplish besides counterfire.

The Divarty commander must at times contribute fire support to the maneuver commander's deep battle, provide SEAD for the division's attack helicopters and CAS, ensure maximum direct support for maneuver units in contact, and be prepared to accomplish general support missions such as massed artillery fires against enemy penetrations. All of these missions require careful and extensive planning. Furthermore, since the direct support mission maintains primacy by doctrine, a Divarty commander could not conduct counterfire and direct support during moments of intense enemy contact. The Divarty staff is simply

overwhelmed. We have seen that TACFIRE cannot solve this problem either. The lesson from Vietnam seems appropriate. Counterfire is most effective when it is conducted by a unit different from the unit supporting the ground effort. There is no reason a corps cannot accomplish the counterfire mission even with extended fronts. The corps artillery commanders in World War Two had similar problems and they solved the problem by delegating part of the counterfire mission to an artillery group headquarters.

Finally, the ability to mass fires required numerous field artillery battalions. During World War II, a corps could have about 35 artillery battalions. A corps today has approximately a third that number. The division artillery in World War II is about equal to a division artillery today. However, today's division artillery must accomplish far more tasks than the division artillery in World War II.

Now to our thesis question: Does the current division artillery have the capability to effectively perform both its direct support and counterfire missions within the demands of the new AirLand Battle Doctrine? The Soviets historically and potentially will overwhelm a defender with massed artillery in support of their attack. We have shown that the planning and fire support assets available to a Divarty commander is insufficient to accomplish the direct fire, SEAD, deep battle, protective fires, and counterfire missions. This insufficiency degrades the Divarty's responsiveness necessary for effective counterfire. The decide-detect-deliver strategy inherently recognizes this reality. Lastly, the correctly placed emphasis on direct support of maneuver units in contact will always be in tension with a systematic destruction of Soviet fire support assets. In fact, the AirLand Battle Doctrine creates a dilemma for the Divarty commander. He must continually decide between the direct support, SEAD, deep battle, protective fires, and counterfire missions. He cannot do it all at the level of responsiveness

necessary. This problem is magnified when we consider the paucity of artillery available to the Divarty commander. Therefore, we must conclude that the current division artillery does not have the capability to effectively perform both its direct support and counterfire missions within the demands of the new AirLand Doctrine. The final chapter will propose a possible solution to this counterfire dilemma.

## 5. Proposal

"The planning and execution of tactical-level battles is the major role of corps," states the preliminary draft of FM 100-15, Corps Operations.<sup>141</sup> Further: "Corps battles are where the challenges and capabilities of AirLand Battle doctrine reach their optimum."<sup>142</sup> Part of these challenges have to do with the corps commander's focus on the close, deep, and rear operations which he must conduct.<sup>143</sup> The artillery is a means by which the corps commander adds depth to his battle plan, supports the rear operations, and is a major means by which to influence the tactical battle at a critical time.<sup>144</sup> Important to the corps commander is his deep attack.

FM 100-5, Operations, distinguishes the several forms and aims of deep attack. Deep battle is defined as attacks to disrupt the enemy forces, attacks of the enemy throughout his depth to degrade his ability to intervene in the close battle, attacks of the follow-on forces with fire and maneuver, and attacks to destroy high payoff targets.<sup>145</sup> The corps commander has the ability to conduct all of these deep attacks with his air assets (made more survivable through SEAD), his artillery assets which include Lance and field artillery brigades, his ability to task organize his divisions and allocation of sustainment priorities, and his intelligence assets. As we have seen in our discussion of the Soviet artillery doctrine, their artillery is a key contributor to their correlation of forces. The counterfire mission, therefore, is a definite means by which the U.S. corps commander can influence the close battle throughout his sector.

The actions of NATO forces to inhibit Soviet offensive tempo and timeliness should be focused on enemy forces in proximity to the close fight. It is here that time is more important, and the outcome of subsequent battles will largely be decided. NATO must place emphasis on disrupting Soviet artillery formations to reduce their ability to achieve established norms for maneuver rates and duration of fire.<sup>146</sup>

Counterfire attacks four principal targets: the direct attack against enemy delivery systems, the attack of enemy command and control cells, the degradation of intelligence gathering and target acquisition assets, and the attrition of artillery sustainment facilities.<sup>147</sup> Even though the new draft of FM 6-20, Fire Support in the AirLand Battle, states that, "The development of AirLand Battle as the Army fighting doctrine does not pose any revolutionary challenges to the fire support system,"<sup>148</sup> it does contend that there is a "...requirement to increase the scope of fire support to an operational level that has not existed since the Second World War."<sup>149</sup> It is our proposal that in an effort to be consistent with the historical lessons learned from the Second World War and after, we should move the counterfire mission (excluding countermortar) back to the corps artillery commander.

Our doctrinal solution would also require modifications in the current allocation of target acquisition assets. The target acquisition and the MLRS batteries should be formed into counterfire battalions. The Divarty commander should be strengthened with additional battalions of 203mm artillery weapons in order to accomplish the countermortar battle, weight the division's main effort, cover gaps, etc. The MLRS should be used to support the counterfire and joint suppression of enemy air defense (J-SEAD) missions of the corps within the corps sector. Our solution would not only solve the division artillery counterfire dilemma, but would provide certain other advantages.

We have already shown in the previous chapter that the interface between Firefinder and a GS artillery battalion was significantly better than with the division artillery. Our recommendation would capitalize on this through the corps management of artillery brigades in support of winning the counterfire battle. Furthermore, the corps commander has other intelligence assets which collect data

on enemy unit locations. The corps commander also has the capability to coordinate the jamming of enemy acquisition radars.<sup>150</sup> Finally, it is through the massing of firepower assets, i.e., synchronization, that firing units achieve the greatest effect on target.<sup>151</sup> The most efficient massing of fire support can be achieved through the positioning of the artillery units to support the battle plan.<sup>152</sup> We should not forget the lesson of the Arab-Israeli War of '73. Artillery was most effective when massed against armored forces.

Some may argue that the Divarty TOC no longer has a mission in our plan. This simply is not the case. The division artillery commander would still be the division commander's FSCCOORD. As a FSCCOORD, he would be responsible through his staff in coordinating the deep battle in support of the maneuver plan, the direct support of front line units, and the SEAD missions for the combat aviation brigade--to mention a few. We have shortened the span of control for the division artillery commander, but this only aids him in his essential tasks as the FSCCOORD. We have given him what he needs--tube artillery so as to influence the battle. A general support weapon such as the MLRS has minimal application for a division fight during intense battle. By realigning resources, the Divarty commander receives assets through which he can accomplish both the general support mission and influence the close battle. The lessons from the Arab-Israeli War of '73 can be applied. The 155mm and 203mm weapon systems have the diversity of ammunition to attack any type of enemy targets and penetrations close to friendly troops--something lacking to the MLRS. Finally, like weapon systems provide both fire support and logistical flexibility. The principles of fire support in the AirLand Battle Doctrine are met.

The battlefield of tomorrow is one of depth, and not as envisioned by the Active Defense Doctrine. Furthermore, the AirLand Battle is not simply a brigade

fight nor really a division fight, but a corps matter. The close engagement by a division is only half of the battle. The counterforce fight by the corps artillery commander along with the corps deep attack against the Soviet second echelon divisions is the other half. In effect, we have added firepower depth to the AirLand Battle Doctrine.



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